Biosensors and Bioelectronics 2010 vol.25 N7, pages 1816-1819

Rapid and direct magnetization of GFP-reporter yeast for micro-screening systems

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Abstract

Saccharomyces cerevisiae containing fluorescent markers are ideal candidates for applications in microfluidic screening systems as fluorescence signal is emitted without the need of additional reagents. Here we develop a method for magnetic functionalisation of such cells which allows their handling and immobilization in micro-screening devices. After exposure of the magnetized GFP-reporter yeast (GreenScreen™) to a genotoxic compound, the fluorescence emission was detected using fluorescent spectrometer and an Epi-fluorescent microscope. Results demonstrate that GFP production and fluorescence emission is not altered by their magnetic functionalization, indicating its potential employment on biosensors, bioreactors and micro-screening studies. © 2009 Elsevier B.V.

http://dx.doi.org/10.1016/j.bios.2009.11.016

Keywords

Cell magnetization, GFP, Magnetic nanoparticles, Toxicity screening